

## EDUCATION

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- **University of California, Davis** Davis, USA  
*Doctoral of Computer Science and Information Sciences* Jan 2023 - present
- **Sharif University of Technology** Tehran, Iran  
*Master of Computer Science - Scientific Computing* Sep 2016 - Sep 2019
  - **Thesis:** 3D Reconstruction and Extrinsic Parameters Calibration of Non-Overlapping Cameras
- **University of Isfahan** Isfahan, Iran  
*Bachelor of Computer Science* Sep 2012 - Jul 2016
  - **Final Project Title:** Chebfun Softwares
  - **Class rank** 1
  - **GPA:** 18.36/20.00

## RESEARCH EXPERIENCE

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- **Guest Researcher** Saarbrücken, Germany  
*Artificial Intelligence aided Design and Manufacturing Group, Max Planck Institute for Informatics* Oct 2020 - May 2022
  - New computational method for designing geometries with structured release profile
  - Supervision of **Dr. Vahid Babaei**
  - Collaboration of **Prof. Julian Panetta** at University of California, Davis, USA.
  - Physics-based simulation of dissolution process
  - Inverse design using nonlinear optimization and adjoint methods
  - Measure release profile of dissolution process using novel capture system
  - Evaluate method with real data experiments
  - Fabrication using fused deposition modeling 3D printers
  - This project was published in ACM Transactions on Graphics
  - This project was presented in ACM SIGGRAPH ASIA 2022
- **Researcher** Tehran, Iran  
*Math Laboratory* July 2017 - September 2019  
*Sharif University of Technology*
  - Study of non-rigid structure from motion problems.
  - Supervision of **Prof.Razvan** and **Prof.Moghadasi**
  - Consult of **Dr.Mostafa Kamali Tabrizi**.
  - Shape-basis vs trajectory-basis nonrigid structures
  - The deformable objects generally vary their shapes over time, so the number of unknown parameters increases dramatically in compare to rigid Structure from motion problems.
  - This project is published as part of my master thesis
- **Internship** Singapore, Singapore  
*Computer Vision and Robotic Perception* July 2018 - March 2019  
*National University of Singapore*
  - Novel method for calibrating extrinsic parameters of non-overlapping cameras
  - Supervision of **Prof.Gim Hee Lee**
  - Formulate problem using light and shadow geometry as structure from motion problem
  - Bundle adjustment as solving nonlinear least square problem using Google Ceres
  - Evaluate method with synthetic data and real experiments
  - This project is published as part of my master thesis

## Team Member

Isfahan, Iran  
July 2008-June 2010

- *Parmida team member*  
*Farzanegane Amin High School*
  - Design junior rescue and junior soccer robots for IranOpen competitions.
  - Design electrical circuits and PCB using Proteus software
  - Design mechanical structure of robots using AutoCAD
  - Programming robots using Assembly language
  - Supervision of **Mohammad Nabi** and **Behrooz Farid**

## TEACHING EXPERIENCE

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### Teaching Assistant

- *Numerical Linear Algebra Matlab Course* 2015  
*University of Isfahan*
  - Teach undergraduate students MATLAB programming language
  - Implementing numerical algebraic algorithms
  - Part of Numerical Linear Algebra undergraduate course

## TECHNICAL SKILLS

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- **Programming Languages:** C, C++, Python, MATLAB, LaTeX
- **Operating Systems:** Linux
- **3D CAD Softwares:** OpenSCAD
- **Version Control Systems:** Git

## RESEARCH INTERESTS

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- Computer Graphics
- Physics-based Simulation
- Computational Fabrication
- 3D Computer Vision
- 3D Reconstruction
- Multiple View Geometry
- Numerical Analysis

## AWARDS

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- Accepted in M.Sc Program without Entrance Exam as an Exceptional Talents 2016
- Ranked 1st among B.Sc graduates in Computer Science at University of Isfahan 2016
- Rank 3rd in IUT RaadCup, Junior Soccer League 2010
- Qualification in RoboCup IranOpen, Junior Soccer League 2009
- Qualification in RoboCup IranOpen, Junior Rescue League 2009
- Accepted in National Organization for Development of Exceptional Talent High School 2007

## PUBLICATIONS

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- Shape from Release: Inverse Design and Fabrication of Controlled Release Structures. Julian Panetta, **Haleh Mohammadian**, Emiliano Luci, Vahid Babaei, ACM Transactions on Graphics (ACM SIGGRAPH ASIA, 2022).